



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,555	12/28/2005	Yutaka Murakami	L9289.05195	8225
52989	7590	12/04/2009		
Dickinson Wright PLLC			EXAMINER	
James E. Ledbetter, Esq.			KASSA, ZEWDU A	
International Square				
1875 Eye Street, N.W., Suite 1200			ART UNIT	PAPER NUMBER
Washington, DC 20006			2611	
			MAIL DATE	DELIVERY MODE
			12/04/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/562,555	Applicant(s) MURAKAMI ET AL.
	Examiner ZEWDU KASSA	Art Unit 2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 22 June 2009.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 23-46 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 33 is/are allowed.

6) Claim(s) 23-32,34-46 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement (PTO/GS-68)
Paper No(s)/Mail Date 11/24/2009

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____

5) Notice of Informal Patent Application

6) Other: _____

DETAILED ACTION

1. This office action is in response to communication filled on 6/22/09.

New claims 23-46 are pending on this application. 1-22 are cancelled.

2. Applicant's arguments with respect to claims 1-22 have been fully considered but are not persuasive.

Response to Remarks

3. Regarding the entire rejection applicant asserted that Murakami (US 2004/01211827) reference qualifies only as 102e.

Examiner respectfully disagrees.

Reference qualifies as 102a so that it qualifies as 103a and for this reason 103(c) is not applicable.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 34-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (US 2004/0121827 A1) in view of Tirkkonen (US 2004/0131041 A1).**

6. As per claim 34, Murakami teaches a transmission apparatus comprising: a plurality of transmission antennas (Murakami, Fig. 31 item 110 120); a frame generation instruction section that outputs a frame generation instruction signal including a symbol reporting a transmission method of transmission signals (Murakami, Fig. 31 item 121); a data sequence generation section that outputs one of a first data sequence comprising a plurality of signals representing the same data and (Murakami, Fig. 31 item 121, Fig. 35 Para [0327]); and a transmission processing section that transmits the first data sequence or the second data sequence from the plurality of antennas (Murakami, Fig. 31 item 102, 1001, 106, 112, 1003, 116).

7. Murakami does not explicitly teach a second data sequence comprising a plurality of signals representing varying data, according to the frame generation instruction signal. Tirkkonen teaches a second data sequence comprising a plurality of signals representing varying data, according to the frame generation instruction signal (Tirkkonen, Para [0044] "...C (s1, s2, s3, s4)

..." Fig.3 item 302, 312). Thus, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to implement the instant limitation, as taught by Tirkkonen, in the apparatus of Murakami, because Murakami teaches transmitting a plurality of signals including the same data from the plurality of antennas in general (Murakami, Fig.31 item 121, Fig.35 Para [0327]) and Tirkkonen teaches and suggests a benefit of a second transmission method of transmitting a plurality of signals including different data from the plurality of antennas that would achieve a higher transmission rate (Tirkkonen, Para [0009], Para [0044] "...C (s1, s2, s3, s4) ..." Fig.3 item 302, 312).

8. As per claim 35, Murkami in view of Tirkkonen teaches the transmission apparatus according to claim 34, wherein: the signals transmitted from the plurality of antennas are transmitted as an orthogonal frequency division multiplexing (OFDM) signal (Murakami, Para [0140] "OFDM"); and the first data sequence or the second data sequence is mapped to at least two of a plurality of subcarriers forming the OFDM signal (Murakami, Para [0067], Fig. 31 item 121, Fig. 35 Para [0327]).

9. As per claim 36, Murkami in view of Tirkkonen teaches the transmission apparatus according to claim 34, further comprising: a

modulation section that selects a modulation scheme for modulating the transmission data of the first or second data sequence from a plurality of modulation schemes (Murakami, Fig. 31 item 102, 112), and modulates the transmission data using the modulation scheme selected (Murakami, Para [0078]), wherein a modulation scheme to apply to the first data sequence and a modulation scheme to apply to the second data sequence have the same maximum M-ary modulation index value (Murakami, Para [0120] "Adaptive array").

10. As per claim 37, Murkami in view of Tirkkonen teaches the transmission apparatus according to claim 34, further comprising: a modulation section that selects a modulation scheme for modulating the transmission data of the first or second data sequence from a plurality of modulation schemes(Murakami, Para [0078]), and modulates the transmission data using the modulation scheme selected(Murakami, Para [0078]), wherein for the modulation scheme, at least one of the plurality of modulation schemes is selected while the first data sequence or the second data sequence is transmitted (Murakami, Fig. 31 item 121, Fig. 35 Para [0327], Para [0078]).

11. As per claim 38, Murkami in view of Tirkkonen teaches the transmission apparatus according to claim 34, wherein the data sequence generation section (Murakami, Fig. 31 item 121, Fig. 35 Para [0327]) cyclically shifts data represented by at least one of the plurality of signals included in the first data sequence or the second data sequence by a predetermined period of time (Tirkkonen, Para [0046] "delay diversity").
12. As per claim 39, Murkami in view of Tirkkonen teaches the transmission apparatus according to claim 34, wherein the transmission processing section (Murakami, Fig. 31 item 102, 1001, 106, 112, 1003, 116) uses an eigen-mode, in which one of a singular vector and an eigen vector of a channel matrix is used as a channel signature vector, as a method for transmitting the second data sequence,
13. As per claim 40, Murkami in view of Tirkkonen teaches the transmission apparatus according to claim 36, wherein the transmission processing section uses an eigenmode, in which one of a singular vector and an eigen vector of a channel matrix is used as a channel signature vector (Murakami, Para [0081]), as a method for transmitting the second data sequence (Tirkkonen, Para [0044] "...C (s1, s2, s3, s4) ..." Fig. 3 item 302, 312).

14. As per claim 41, Murkami in view of Tirkkonen teaches the transmission apparatus according to claim 37, wherein the transmission processing section uses an eigenmode(Murakami, Para [0081]), in which one of a singular vector and all eigen vector of a channel matrix is used as a channel signature vector, as a method for transmitting the second data sequence(Tirkkonen, Para [0044] "...C (s1, s2, s3, s4) ..." Fig.3 item 302, 312).

15. As per claim 42, Murkami in view of Tirkkonen teaches the transmission apparatus according to claim 34, wherein the data sequence generation section switches the first data sequence (Murakami, Fig. 31 item 121, Fig. 35 Para [0327]) and the second data sequence according to the number of communicating parties (Tirkkonen, Para [0044] "...C (s1, s2, s3, s4) ..." Fig.3 item 302, 312).

16. As per claim 43, Kim teaches a reception apparatus comprising: a transmission method determining section that selects one of a first transmission method of transmitting a plurality of signals representing the same data from a plurality of antennas and (Kim, Para [0021] "... classified according to main transmit mode ...") a second transmission method of

transmitting a plurality of signals representing varying data from the plurality of antennas; a modulation scheme determining section that selects one of a plurality of modulation schemes (Kim, Para [0021] "... a modulation method ..."); a control section that controls whether not to select the transmission method and the modulation scheme in the transmission method determining section and the modulation scheme determining section according to procedures of communication with a communicating party (Kim, Para [0021] "... modulation method, and an antenna transmit method determined ..."); and a requesting section that conveys a request for the selected transmission method and modulation scheme to the communicating party (Kim, Para [0021]] "... classified according to according to main transmit mode ...").

17. Kim does not teach explicitly a second transmission method of transmitting a plurality of signals representing varying data from the plurality of antennas. Tirkkonen teaches a second transmission method of transmitting a plurality of signals representing varying data from the plurality of antennas. (Tirkkonen, Para [0044] "...C (s1, s2, s3, s4) ..." Fig.3 item 302, 312). Thus, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to implement a second transmission method of transmitting a plurality of signals including different

data from the plurality of antennas, as taught by Tirkkonen, in the apparatus of Kim, because Kim teaches transmitting a plurality of signals including the same data from the plurality of antennas in general (Kim, Para [0021] "... classified according to main transmit mode ...") and Tirkkonen teaches and suggests a benefit of a second transmission method of transmitting a plurality of signals including different data from the plurality of antennas that would achieve a higher transmission rate (Tirkkonen, Para [0009], Para [0044] "...C (s1, s2, s3, s4) ..." Fig.3 item 302, 312).

18. As per claim 44, Kim in view of Tirkkonen teaches the reception apparatus according to claim 43, wherein the control section performs control such that, while data is received, the transmission method determining section does not select the transmission method and the modulation scheme determining section alone selects the modulation scheme (Kim, Para [0047] "controller").

19. As per claim 45, Kim in view of Tirkkonen teaches the reception apparatus according to claim 43, further comprising: a channel estimation section that estimates at least one of a channel of received signals and a reception field intensity of the received signals (Kim, Fig.1 item 134), wherein the transmission method determining section selects the

transmission method based on the estimation result in the channel estimation section (Kim, Fig.3 item 135, Para [0059]).

20. As per claim 46, Kim in view of Tirkkonen teaches the reception apparatus according to claim 43, wherein a modulation scheme to apply to the first data sequence and a modulation scheme to apply to the second data sequence have the same maximum M-ary modulation index value (Kim, Fig. 3 –wherein different transmission method and modulation scheme used).

21. *“In re claim 23-32 Murakami in view of Tirkkonen discloses a transmission method because under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claims, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324,231 MPEP 2112.02”*

Allowable Subject Matter

22. Claims 33 is allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZEWDU KASSA whose telephone number is (571)270-5253. The examiner can normally be reached on Monday - Friday (7:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Chieh can be reached on 571 272 3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

zk

/David C. Payne/
Supervisory Patent Examiner, Art Unit 2611